

What is claimed is:

1. A control device for a hybrid vehicle, the hybrid vehicle comprising an engine, which is adapted to allow a partial cylinder deactivation operation, a motor, which is capable of power generation, and driving wheels, the output power of at least one of the engine and the motor being transmitted to the driving wheels for driving the hybrid vehicle;

the control device comprising:

a battery device sending energy to and receiving energy from the motor;

a temperature measuring section for measuring the temperature of the battery device;

a control section which is adapted to execute a warming control operation for the battery device when the temperature of the battery device measured by the temperature measuring section is equal to or lower than a first predetermined value; and

a determination section for determining whether the partial cylinder deactivation operation is permitted for the engine depending on the running state of the engine, wherein

the control section is further adapted to execute a vibration control operation for the engine by operating the motor so as to reduce vibration of the engine when it is determined by the determination section that the partial cylinder deactivation operation is permitted for the engine, and to perform the warming control operation for the battery device by executing a vibration control operation for the engine.

2. A control device for a hybrid vehicle according to claim 1, wherein the warming control operation for the battery device by executing vibration control operation for the engine is performed only in the case in which a state of charge of the battery device is

greater than a predetermined value, and the temperature of the battery device is higher than a second predetermined value.

3. A control device for a hybrid vehicle according to claim 1, wherein the control section is further adapted to operate the engine in an all-cylinder operation state when it is determined by the determination section that the partial cylinder deactivation operation is not permitted for the engine, and to perform the warming control operation for the battery device by charging the battery device with electrical energy generated by the motor.
4. A control device for a hybrid vehicle according to claim 1, wherein the determination section is adapted to determine whether the partial cylinder deactivation operation is permitted for the engine depending on one of the parameters including the temperature of cooling water of the engine, a state of charge of the battery device, and the temperature of the battery device.
5. A control device for a hybrid vehicle according to claim 1, wherein the determination section is adapted to determine whether the partial cylinder deactivation operation is permitted for the engine while containing a threshold value which is determined by a depression amount of an accelerator pedal and the vehicle speed.
6. A control device for a hybrid vehicle according to claim 1, wherein, when it is determined that the partial cylinder deactivation operation is permitted, and when the warming control operation for the battery device is performed by executing the vibration control operation, an amplitude for the vibration control operation is differently set depending on the temperature of the battery device.

7. A control device for a hybrid vehicle according to claim 6, wherein a greater amplitude for the vibration control operation is set when a greater increase in the temperature of the battery device is required.